Infectious Disease in the TEOTWAWKI World

by Militant Medic
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Before we start, here's a quick disclaimer: I am a physician who has been practicing for 11 years, so I hope I know what I'm talking about, BUT this information is written for a TEOTWAWKI scenario where routine hospital-based care is unavailable and the only antibiotics you have are ones designed for pets. This article is written for the desperate times ahead. Please do not use it as a guide to infectious diseases or how you should provide care to your family now. If you or a family member is ill and the hospitals are still staffed with knowledgeable and compassionate doctors who have all the great drugs Big Pharma can produce, *that is where you should go for care*. I assume no liability if you use this information in a scenario in which it was not intended. So once again: this article applies to a TEOTWAWKI scenario where all you have is pet antibiotics. It should not be used to guide medical decision-making for any timeframe prior to that event.

So, "it" has hit the fan, but fortunately you had seen the writing on the wall and gotten your act together. You have food, water, shelter, defense, and first aid. You're ready for anything.

Included in your first aid inventory is a good selection of antibiotics, and now the time has come to use them, but your OPSEC wasn't as good as it should be and word has gotten out that you have antibiotics. The people are coming from far and wide. (If you don't think people will travel for medical care, you are wrong. When I did a medical mission in Honduras, people were walking for 10-20 miles through the jungle to see us; so, it will happen.)

Let's walk through a few scenarios. Here are the "patients" you have waiting in your front yard "waiting room":

1. Your wife has a sore throat without a runny nose or cough. It hurts to swallow. Little red spots are scattered across the back of her mouth, and her tonsils are swollen and beefy red without white spots.
2. Your son cut his hand a few days ago, and now the cut is red, hot, and oozing puss.
3. Your other son also cut his hand while salvaging some stuff from a nursing home. His wound too is red, hot, and oozing puss.

4. Your grandson (who never got his vaccinations, because your son didn't believe the "lies" of big pharma) is having coughing fits that take his breath away and end in a "Whoop" of inhaled air.

5. Your other grandson (again who had no vaccinations) has broken out with a fever, runny nose, and rash that consists of small fluid-filled blisters on bright red spots on his skin. They itch, and when one area gets better another area gets worse.

6. Your third grandson (again who had no vaccinations) has headache, vomiting, muscle aches, a fever of 104.2, and weakness of his left leg muscles. Ten days ago, you chastised him for drinking untreated water from a creek. He didn't know but it was downstream from a big FEMA refugee camp.

7. Your neighbor's wife has a fever, abdominal pain, and vaginal drainage. You know she was raped on a trip to the farmer's market one week ago.

8. A farm hand seemed okay yesterday but woke with a fever to 102.9, chills, coughing, body aches, runny nose, and a headache. His nasal drainage is yellow-green.

9. Your teenaged daughter has not been drinking enough since you ran out of "flavor enhancers" for your water. Now, she has a fever of 101.5, painful urination, urinary frequency, and urinary urgency. Her urine smells "strong".

10. Your prepper neighbor (who has a special filter to remove the fluoride from his city water) has been struggling with a toothache for a few days but now he can barely open his mouth. He has a fever of 102.3, jaw pain, and swelling on the right side of his face. He took some penicillin he had stocked and it seemed to help a little, but then his symptoms got worse.

11. Your neighbor ran out of food a while ago and has been shooting and eating prairie dogs out of desperation. He was okay yesterday but woke in the middle of the night with fever and now has fever to 103.7, headache, chills, muscle aches, and diarrhea. He also says his "glands" are swollen in his neck, armpit, and groin.

12. Another neighbor was out hunting when he drank untreated water from a creek. Upstream he found a beaver pond. He presents with abdominal pain, copious watery (non-bloody) diarrhea, and a fever to 102.2.

13. A boy from down the road was caught looting a house and was hit in the abdomen with three rounds of 00 buckshot as he ran away. He presents with a swollen painful abdomen that is rock hard and fever to 105.6. He is incoherent and having hallucinations. The buckshot is still in his body. His father begs you to save him, and he says he will give you his cherry 1965 Mustang fastback if you do. (If he hadn't spent so

much time and money on that car, he might have been able to get some preps of his own and wouldn't have had to resort to looting houses for food.)

14. Your neighbor's son presents with fever, fatigue, headaches, vomiting, and diarrhea, and has been unable to sleep. Dad hoped it was just a virus and would pass, but this morning he had a seizure and the father brings him to you. Two months ago, the child found a bat in their grass in the middle of the day. He picked it up and got bit, but the wound seemed to heal without complication.
15. Your aged mother has had a sore throat, low grade fever of 100.6, and stuffy nose for four days. There are white patches on her tonsils. It hurts a little to eat or drink.
16. A farmer from down the road (whom you don't like very well) tells you he has been trading food for sexual favors from the desperate unprepared women of the nearby town. He says there is an ulcer on the head of his penis. Otherwise, he feels fine. It does not hurt, but he is worried he might have "picked something up from one of those whores!"
17. A coworker has shown up for help. You had talked to him about prepping, and he was on the path when the balloon went up. He presents with bloating, watery diarrhea that has streaks of blood in it, abdominal pain, and a fever to 104.7. He says the diarrhea smells like horse manure. He also says he recently had a suspected strep throat and took Clindamycin for it. (It's the only antibiotic he had), and while the throat got better, the diarrhea (which he suspected to be from the antibiotic) has been present for nine days now and is getting worse.
18. A neighbor's child has been struggling with an illness for about a few days but over the last 24 hours has worsened significantly. She awoke this morning with a very stiff neck, high fever, severe headache, and severe nausea. She also has broken out with a blotchy purplish rash on her lower extremities that does not go pale (blanch) when you push on it. Father is here begging for help.
19. A neighbor has been ill for about five days. Started with two days of non-bloody vomiting and then evolved into watery non-bloody diarrhea. Had a fever of 101.3 at the beginning of the illness but does not have one now.
20. A neighbor ran out of food a few weeks ago and has been out foraging in the forest. He has pulled a lot of ticks off his body. He presents with fever to 102.5, muscle aches, a headache, and a rash on his thigh that looks like a bullseye with concentric rings of redness.

Wow! Do you have your work cut out for you. They are all coming to you for help. You've got the antibiotics, but which one do you use for each of your "patients". Are these bacterial infections that will respond to antibiotics or will you waste your precious antibiotics treating an untreatable virus? If it is a bacterium, will you pick the right antibiotic and heal your patient or will you pick the wrong one potentially making your patient worse, while at the same time wasting a precious resource you cannot easily replace.

Understanding how to identify and treat infectious disease is an often-misunderstood subject within the prepper community. Few of us have real medical training, and many of us rely on word of mouth or tradition. Some of us make the mistake of thinking all antibiotics are the same. It is my intention to provide a basic understanding of infectious disease and its treatment.

Bacteria, Virus, Fungi, Parasites, and Prion

Medicine.net defines an infection as "The invasion and multiplication of microorganisms such as bacteria, viruses, and parasites that are not normally present within the body. An infection may cause no symptoms and be subclinical, or it may cause symptoms and be clinically apparent. An infection may remain localized, or it may spread through the blood or lymphatic vessels to become systemic (body-wide). Microorganisms that live naturally in the body are not considered infections. For example, bacteria that normally live within the mouth and intestine are not infections."

There is a lot there, in that little definition and beyond, that the definition is not even accurate! Germs that normally live in your body *can* cause infections and do frequently. Any woman who has ever had a yeast infection knows this. Yeast is a natural part of a woman's genital tract. Usually kept in check by the natural competition with other bacteria that live "down there" and by the natural acidity of the genital tract. However, if she takes an antibiotic that kills those competing bacteria, yeast can overgrow leading to a yeast infection. So, we see the definition above is not even right.

First, I would like to present a few definitions we use a lot in medicine that some of you may not be familiar with. (Some of these are not textbook thorough but simplified for our conversation):

– **Germ:** any microorganism in existence. This includes bacteria, virus, parasite, fungi, and prions.

– **Pathogen:** a germ that infects you and makes you sick (i.e. Strep pyogenes, which causes strep throat)

– **Commensal**: a germ that generally lives in or on you but does not make you sick; it doesn't help you either. (For example, staph epidermidis is a germ that lives on your skin but only in very rare cases makes you sick.)

– **Symbiote:** a germ that gains a benefit from living in or on you but that provides a benefit to you in return. A current buzzword for some of these is probiotics. (E. coli live in our intestines where they absorb nutrients but in return secrete Vitamin K– an important clotting factor– that our body absorbs and uses.)

Germs

Now let's gain an understanding of each of the different types of germs. I tried to keep from getting too technical.

Bacteria are single-celled organisms that are prokaryotic (in that they lack a membrane-bound nucleus and other intercellular structures common to more advanced organisms). They are very small, usually no larger than a few micrometers (or 0.0001 inch) and come in a variety of shapes. They are found all over the earth from deep sea vents to the arctic. Obviously, we are most interested in the ones that inhabit or infect humans. We are filled and covered with bacteria, and it is estimated there are 10 times more bacteria on and in us than we have cells in our body! Most are commensals, which basically mind their own business and help keep more pathogenic bacteria in check through normal mechanisms of competition.

Bacteria can be classified in a number of different ways. Most are beyond the scope of this article. One classification that is helpful to understand is Gram staining. Gram stain is a purple dye that selectively stains cell walls. Gram positive bacteria (which have thick cell walls) stain purple, and Gram negative (which have thin cell walls) stain pink. The two most important Gram-positive bacteria are the Strep and Staph family. An understanding of whether a bacterium is Gram positive or negative is important because many antibiotics are much better at killing one or the other. For example, antibiotics that target cell walls (like the penicillins) are much better against Gram positive bacteria with their thick juicy cell walls than Gram negative with their wimpy unappetizing thin cell walls.

Another classification that is helpful are anaerobic vs. aerobic. Aerobic bacteria can tolerate the presence of oxygen and include Streps, Staphs, Mycoplasma (the cause of tuberculosis), and Enterobacteriaceae (Salmonella, Klebsiella, E. coli, Yersinea (plague), and Shigella). Anaerobic bacteria tolerate oxygen poorly and will not grow well in areas with a lot of oxygen. Some examples of anaerobic bacteria include Clostridium (C. diff, botulism, gas gangrene, and tetanus), Fusobacteria, Corynebacterium (diphtheria). Some antibiotics (like Metronidazole) only work against anaerobic bacteria.

Many of the classic diseases of mankind are caused by bacteria. These include scarlet fever, cholera, tuberculosis, syphilis, anthrax, bubonic plague, tetanus, gangrene, and leprosy.

Almost all bacteria can be killed by one antibiotic or another.

Viruses are small infectious particles (notice I did not say cells) that require a host cell to replicate and reproduce. Viruses come in a wide variety of forms, including plant viruses, animal viruses, and even viruses that infect bacteria and parasites. Viruses are so small they cannot be seen, even with the most powerful light microscopes.

Because they have to "hijack" your cells to divide, all human viruses are considered pathogenic. There are not any viruses that I am aware of that are commensals or symbiotes.

Many famous diseases of mankind are caused by viruses, including smallpox, polio, influenza, herpes, chickenpox, HIV/AIDS, hepatitis A, B, and C, right down to the lowly common cold (Rhinovirus). Viruses have been in the news a lot lately, as they are the cause of Ebola and Avian flu.

To my knowledge, we have discovered treatment for only a few strains of viruses, and I say "treatment" instead of "cure" because the medications we have discovered only slow and weaken the virus as opposed to kill them, but this is better than nothing. The few viruses we can treat are HIV, chickenpox, herpes, hepatitis B and C, and influenza. For all other viruses THERE IS NO TREATMENT. Understanding this one simple point is really important if you do not want to waste your antibiotics on a viral illness you cannot treat.

Fungi are a large family of eukaryotic organisms, which means they have membrane bound nuclei and other advanced cellular structures. They range in size from single-celled yeasts to very large underground branching structures that create mushrooms when ready to reproduce.

While fungi can be very damaging to plants, only a few bother humans. The pathogenic species are the Dermatophytes (Greek for "Skin Lovers", which are the causative agents of ringworm, toenail fungus, athletes' foot, and jock itch) and Yeasts (which can infect a woman's genital tract or our skin). There is also a triad of geographically localized fungi that can also make you sick. These are Histoplasmosis (endemic to the Ohio River Valley), Coccidiomycosis (endemic to the central valley of California), and Blastomycosis (endemic to the Great Lakes region). These three usually cause lung disease, due to inhalation of the spores. A bunch of other fungi are less dangerous and generally only cause disease in people with weakened immune systems, like AIDS patients.

There are many good treatments against fungi, and all can be killed by one antifungal or another. Regular antibiotics (used to kill bacteria) do NOTHING against fungus and can actually

make them grow more by removing their bacterial competition. (Just ask any woman who has had a yeast infection after a course of antibiotics.)

Parasites are a large family of critters where the parasite benefits from the host, while the host is harmed. While bacteria and viruses are technically parasites for our discussion, we will not consider them as such. We will also not be considering important but largely foreign parasites (like malaria) in our discussion.

We will be focusing on endoparasites (parasites that live in us, like worms) or exoparasites (parasites that live on us, like lice) of the human body. Parasites are multicellular and, in this regard, more closely related to humans than viruses, bacteria, or fungi.

Parasites are an additional concern because many act as vectors in spreading other viral, bacterial, or parasitic illnesses. The classic example is bubonic plague (Yersinia pestis), which was spread by fleas. If you could avoid being parasatized by the flea, you could avoid the plague.

We have good treatments against parasites, but the more closely the parasite resembles a human the more likely the treatment will hurt you as well. Significant side effects are common with many parasite treatments. Like viruses and fungi, parasites are usually unaffected by antibiotics.

Prions are infectious proteins that can cause other proteins to change shape, leading to harmful effects to the host. As they do not contain any genetic material and cannot reproduce in the classical sense, technically they are not living organisms. Prions were not discovered until 1982 and are rare. They are the causative agents of Mad Cow Disease and Kuru. Prion disease is transmitted by eating infected brain and spinal cord tissue. Once acquired there are no treatments and prion disease is universally fatal. So, don't eat brains.

How Do Antibiotics Work?

Before we talk about how antibiotics work, I want to discuss something called Antibiotic Spectrum of Activity. Antibiotics are generally classified as Broad-spectrum, Intermediate-spectrum, or Narrow-spectrum. This refers to how many different types of bacteria the antibiotic can and will kill. I will discuss the spectrum of each of the antibiotics in greater detail below, but in general Broad-spectrum kill a wider variety of bacteria than narrow-spectrum, which kills fewer and more specific bacteria. While some may think "The antibiotic I want to take is the one that always kills the most different kinds of bacteria. Give me the broadest-spectrum you have!", this is a mistake. Remember, most of the bacteria in your body either don't hurt you or they actually help you, and sometimes just their presence keeps other harmful bacteria in check. Using a broad spectrum, like Clindamycin, to treat strep throat is like taking out a foxhole with a tactical nuke. You kill everything on the battlefield– good guys and bad. While it will cure the strep throat, it will wipe out all your friendly gut bacteria too, leaving you

with a case of diarrhea, if you are lucky, and a case of Clostridium difficile colitis, if you are not. In general, the only time doctors use broad spectrum antibiotics is when there is not a narrow spectrum that will do the job (Clinda to kill MRSA) or you have a wound that potentially has a lot of different bacteria in it and you want to kill all of them (Augmentin for a dog bite). If you know the bacteria that is causing the problem, use a narrow-spectrum antibiotic that will kill the pathogen and only the pathogen.

WARNING!! Like other meds, many antibiotics can cause unpleasant side effects. If you are lucky, you just get a little loosening of the stools or a mild yeast infection. However, others can cause changes in red or white blood cells or liver or kidney problems. Many can also interact with other medications you might be taking. Before taking any drug, you should read about it and gain an understanding of potential side effects you might experience. This is especially true if you are pregnant or breastfeeding. I have discussed some of the bigger potential complications below, but it is by no means an exhaustive list. Before starting an antibiotic, you will need to evaluate whether the risks are outweighed by the benefits. In some cases, it's easy. "The risk is a rash, but if I don't take it I will die!" Obviously, the benefits outweigh risks in this case. More difficult will be "I have a runny nose. It might be a sinus infection, but it could just be a virus and the only antibiotic I have will likely give me severe diarrhea." This is a harder choice to make.

How Do Antibiotics Work? (continued)

Antibiotics work in a number of different ways, but perhaps it would just be easier to talk about each one individually. I will focus on the pet antibiotics, since these are the ones most of us can stockpile easily. Again, trying to make this as simple as I can, I have omitted many technical details. (A cellular biologist may take exception to what I say, saying "He didn't even discuss peptidoglycan cross linkages by the DD-transpeptidase enzyme!! Who does he think he is!!??" However, I think most of the prepper army will appreciate omission of the technical fluff.)

Penicillin (Fish-Pen)

Penicillin was the first really effective antibiotic discovered and the starting point from which other antibiotics were developed. The original penicillin worked best if injected, but eventually an oral preparation was developed (called Penicillin VK or phenoxymethylpenicillin potassium), and this is what you get when you buy Fish-Pen.

The penicillin antibiotics are part of the beta-lactam family of antibiotics due to a chemical structure common to these antibiotics called a beta-lactam ring. Other members of the beta-lactam family are the Cephalosporins. Penicillin (and the other beta-lactams) function by deactivating an essential cell wall-building enzyme in the bacteria. With the bacteria unable to repair its cell wall, the cell wall begins to break down and the bacteria literally pops and dies.

Penicillin once treated a wide variety of bacteria, but overuse allowed most bacteria to develop resistance. The most common form of resistance to penicillin is the beta-lactamase enzyme, which cuts the beta-lactam ring, which deactivates the penicillin and renders it harmless to the bacteria. This caused penicillin's spectrum to become more and more narrow over time as fewer and fewer pathogens responded to it. Today, penicillin is only used as first choice for one infection– strep throat. That's it. Penicillin's spectrum is so narrow (because so many things are resistant to it) that we only use it for one thing– killing Streptococcus pyogenes, which is the bacteria that causes strep throat. It can kill a few other bacteria, like Streptococcus pneumoniae (a cause of pneumonia) and Fusobacteria (a cause of trench mouth and dental abscesses). However, because you don't know if the pneumonia is caused by S. pneumonia or if the dental abscess is caused by Fisobacteria, you don't use penicillin first.

Because penicillin selectively targets an enzyme that we humans don't have or need, the side effects of this antibiotic are usually very mild.

Because the spectrum of penicillin has become so narrow, I do not recommend that anyone stock this antibiotic. Other antibiotics are the same price and have more than one use. Continue reading to see which antibiotics to keep on hand for strep throat.

Ampicillin (Fish-Cillin)

Ampicillin was invented by sticking an amino group onto the side of Penicillin. This increased the antibiotic's ability to penetrate into bacteria, which broadened the spectrum of this antibiotic to include some gram-negative bacteria. Like penicillin, it is a beta-lactam antibiotic. Like penicillin, it works by inhibiting cell wall repair leading to bacterial cell death.

It is classified as an intermediate-spectrum antibiotic. While broader in spectrum than penicillin, it is still pretty narrow. It kills the three bacteria penicillin kills plus Group C strep (enterococcus) and the gram-negative bacteria Haemophilus influenzae, Neisseria meningitidis, and members of the Enterobacteria family (like Shigella, Salmonella, and E. coli).

Because ampicillin selectively targets an enzyme that we humans don't have or need, the side effects of this antibiotic are usually very mild.

Ampicillin is a good first line choice for strep throat, sinus infections, ear infections, some urinary tract infections, and other respiratory infections like pneumonia. Of the available pet beta lactams, it has the best CNS (central nervous system) penetration, and so it is a good choice for meningitis.

Amoxicillin (Fish-Mox)

Amoxicillinis the big brother of Ampicillin and another child of Penicillin. Like Ampicillin, it is made by adding side groups to penicillin. In Amoxicillin's case, one side group broadens its

spectrum (making it, like ampicillin, an intermediate-spectrum antibiotic) and another side group increases its absorption from the human gut. Like penicillin, it is a beta-lactam antibiotic. Like penicillin, it works by inhibiting cell wall repair leading to bacterial cell death.

It has the same spectrum as ampicillin, but it also kills Borellia (the causative agent of Lyme disease) and Moraxella (a cause of ear and sinus infections) and Heliobacter pylori (the cause of bleeding stomach ulcers). Amoxicillin is used for basically the same infections as ampicillin with the addition of being effective against lyme disease and stomach ulcers.

Because amoxicillin selectively targets an enzyme that we humans don't have or need, the side effects of this antibiotic are usually very mild.

If I had to pick one of the three penicillins to stock, Amoxicillin would be the one. It has a broader spectrum than Penicillin (without being too broad) and is better absorbed from the stomach than Ampicillin.

Cephalexin (Fish-Flex)

Also known as Keflex in the retail world, Cephalexin is a first-generation Cephalosporin. After Penicillin was discovered, mold scientists went looking at other molds to find other antibiotics (a process called bio-prospecting), and it was thus that the Cephalosporins were discovered.

They are closely related to the Penicillins in that they have a beta-lactam ring and act by inhibiting cell wall repair. Like the penicillin family, they are most effective against bacteria with thick cell walls (Gram positive) and are intermediate in spectrum. They are effective against streps (so this is a fine choice against strep throat) and the staphs. However, unlike the penicillins, they are more resistant to bacterial defenses and so work against more and different bacteria. This is especially important for one reason– Staphlococcus aureus.

Staph aureus (which I will just call Staph from now on, even though there are many other strains of Staph) is a common and very aggressive bacteria that is the cause of many infections. Staph is found on our skin and in our noses, and as long as it stays there it does not cause many problems. However, if you get a little cut or scratch, staph may get in and make an infection. STAPH IS THE #1 CAUSE OF WOUND INFECTIONS WORLDWIDE. It can cause small abscesses if your immune system gets it walled off fast enough, but if not, you get more severe infections like cellulitis, necrotizing fasciitis, sepsis (infection traveling in the bloodstream), osteomyelitis (infection of the bone), endocarditis (infection of the heart), or meningitis (infection of the spinal cord). Obviously, many of these can lead to death. Being in the nose (part of the respiratory tract), it can also cause sinusitis and pneumonia. Staph was one of the first bacteria to develop a resistance to the penicillin family of antibiotics. Worldwide today over 80% of Staph strains are immune to penicillin, and in some areas as many as 97% of strains are

resistant. However, they are not resistant to Keflex! So, this is an antibiotic you really want to keep on hand.

Keflex is first line for infections by Streps and Staph, including skin abscesses, boils, folliculitis, mastitis, mild cellulitis, impetigo, erysipelas, and strep throat. It can also be used for ear infections, respiratory infections, and UTI's, but it is not the best choice for these infections.

Three important notes: First is that Keflex treats regular Staph aureus, but it *does not* treat Methycillin Resistant Staph Aureus (MRSA). Keep reading to see what antibiotic you will need to treat that. Second is that it does not penetrate into the brain and spinal cord. So, it is a very poor choice for meningitis. Third is it has a fairly short half-life and usually needs to be taken three if not four times a day to get best effect.

Because Keflex selectively targets an enzyme that we humans don't have or need and because it doesn't wipe out all your gram-negative gut bacteria, the side effects of this antibiotic are usually very mild.

In a TEOTWAWKI scenario, I foresee a lot of manual labor and violence. Both of these things lead to cuts, scratches, and puncture wounds, which means a lot of staph infections. This means you will need Keflex.

Ciprofloxicin (Fish-Flox)

Now for something completely different– an antibiotic that isn't a beta-lactam! Ciprofloxicin belongs to the Fluoroquinolone family of antibiotics, which were discovered by accident in the lab by a chemist trying to make malaria medication, but they sure work.

Cipro works by inhibiting bacterial Topoisomerase enzymes, which makes the bacteria unable to reproduce by blocking DNA replication. This works in both gram positive and gram-negative bacteria. Bacterial resistance to Cipro is increasing and spreading, but at this moment in time is still pretty rare.

Cipro is a broad-spectrum antibiotic that kills a wide variety of gram positive and gram-negative bacteria. It kills Staph aureus and Pseudomonas– two bacteria that are resistant to many other antibiotics. Because it is so broad in spectrum, it is not generally recommended for less complex infections where a narrower spectrum antibiotic would work. You don't want to use this for a strep throat or simple skin abscess, if you have Keflex on hand.

Cipro is considered the first line agent for complicated UTI's and kidney infections, bone and joint infections, typhoid, prostatitis, abdominal infections, gonorrhea, plague, and anthrax. It is also frequently used for infections acquired in the hospital where resistances are more likely. It can also be used for sinus infections, community acquired pneumonia, strep throat, or ear infections, but it is generally considered a little too strong for these infections. Most MRSA

bacteria will respond to Cipro, but resistance is developing, and there are better choices. Cipro also penetrates the blood brain barrier well and so is a good choice for meningitis.

Like any medication, Cipro is not without potential side effects, and in Cipro's case there is a big one. In fact, it carries a Black Box warning because of it. Cipro is associated with tendonitis and tendon rupture. The risk is increased if you are over 60 and/or on steroids. It's rare (0.1% chance or one in a thousand), but being on Cipro makes it three times as likely compared to the general population. Also, the tendon that ruptures most often is the Achilles tendon that connects your heel with your leg. So, think long and hard about taking this drug, especially if it is for something less severe. Getting through the wasteland as a cripple will not be easy.

Having Cipro on hand is a good idea, though. It will treat some things nothing else will, but it should not be used frivolously. Other antibiotics will often do the same job with fewer side effects and won't put your tendons at risk.

Doxycycline (Fish-Doxy)

Doxycline is an antibiotic that is a member of the Tetracycline family of drugs. Like so many other bacteria, the tetracyclines come from a soil fungus and were discovered in the 1940's. Or maybe it's more accurate to say tetracyclines were rediscovered then because bone analysis of Nubian people who lived about 350AD show they ingested tetracycline likely in a locally brewed beer.

The tetracyclines work by binding to and deactivating the ribosomes inside the bacterial cell. Ribosomes are the bacteria's protein factories, and without it they cannot produce the proteins they need to stay alive. Ribosomal deactivation happens in both gram positive and gram-negative bacteria, though sometimes the antibiotic has a little more trouble getting into Gram positive cells with their thicker cell walls. Some bacteria have also developed resistance to the tetracyclines usually by developing a pump that spits the antibiotic out of the cell and thereby protecting the ribosomes on the inside.

As it treats a large number of bacteria, Doxycycline is considered a broad-spectrum antibiotic. Doxycycline is the preferred agent in treating Chlamydia, Rickettsial infections spread by ticks (Typhus and Rocky Mountain Spotted Fever), and Cholera. It will also work against walking pneumonia (caused by Mycoplasma pneumonia, though technically Azithromycin is a better choice but there is no Fish-Azithro), most strains of Gonorrhea, and early Syphilis infections. Doxy will also work against Anthrax, Plague, Tularemia, and Legionnaires disease. While not FDA approved for this, it will also treat Lyme disease. It will also treat sinus infections, pneumonia, and ear infections, but it is generally a second- or third-line choice for these. Doxy is generally a poor choice for the streps and staph, as their thicker cell walls are harder to penetrate.

Unlike most antibiotics, Doxycycline is also active against certain parasites of the protozoal class. It can help prevent malaria and is often used as a prophylactic for people visiting malarial areas. However, it is poor in treating malaria once the disease is already established.

Doxycycline is best taken on an empty stomach, though it can be taken with foods as long as they don't contain calcium (milk), iron (red meats), or aluminum or magnesium (antacids). Calcium, iron, aluminum, and magnesium bind to the antibiotic, decreasing its absorption. Doxycycline should not be taken by children under age 8 or by pregnant women, as it can cause staining of pre-emergent teeth. Unlike Tetracycline, expired Doxycycline does not cause kidney damage.

Trimethoprim-Sulfamethoxizole (Bird-Sulfa)

Trimethoprim-Sulfamethoxizole (a.k.a Bactrim, Septra, or co-trimoxazole and abreviated as TMP-SMX) is a combination of two different weaker antibiotics that when added together seem to be greater than the sum of their parts. Sulfamethoxizole is a sulfa-based antibiotic that works best against Gram-positive bacteria (like strep and staphs) as well as many anaerobic bacteria. Trimethoprim is a man-made antibiotic that works against aerobic bacteria. They are combined in a ratio of one part Trimethoprim to five parts sulfamethoxizole, so the dosing will often be listed as 80mg/400mg or 160mg/800mg. Both act by disrupting the bacteria's ability to process folate, which stops DNA production and a host of other processes resulting in bacterial cell death.

TMP-SMX is considered a broad-spectrum antibiotic. Trimethoprim-Sulfamethoxizole (TMP-SMX) is not a terribly effective antibiotic, and a lot of people have unpleasant reactions to its use. The worst-case scenario is that TMP-SMX has a known risk of causing Stevens-Johnson Syndrome (SJS). SJS is a life-threatening reaction that causes your skin to peel off your body. Yeah, it's as unpleasant as it sounds. Because of these problems, the use of TMP-SMX declined through the 80's and in some countries, it was even banned.

So why do we use it today? It's four little letters– MRSA. As MRSA (Methycillin-Resistant Staph Aureus) began to spread across the world and began showing up in more and more infections, the medical community began looking for effective treatments. Doctors discovered there are two different types of MRSA. One is more common in hospital settings and is resistant to almost everything and can only be treated with IV antibiotics in the hospital. The other was termed community acquired Methycillin resistant Staph aureus (CA-MRSA) and only two oral antibiotics were found to kill it on a regular basis. These two antibiotics were TMP-SMX and Clindamycin. And so, TMP-SMX came roaring back into the medical mainstream.

While TMP-SMX is a broad-spectrum antibiotic, cautious use is recommended due to the potential side effects and interactions with other medications. It is a first line agent for CA-

MRSA. It is also considered first line for most all urinary tract infections, as it treats the top five causes of UTI's (E.coli, proteus, klebsiella, enterobacter, and staph saprophyticus). It is also the first line agent for cat scratch disease. It will also treat most other streps and staphs, but other antibiotics will do the same with fewer side effects. It can be used for ear infections, pneumonia, chlamydia, ghonnorhea, toxoplasmosis, plague, cholera, traveler's diarrhea, and many others. However, once again, there is usually a better choice. Interestingly, it does not do well against strep throat.

Because it can mess with your own folate metabolism, it should not be used in pregnancy.

Metronidazole (Fish-Zole)

Metronidazole(better known under its trade name, Flagyl) is a very interesting and unique antibiotic. Invented in France in the 1950's, it is part of the Nitroimidazole family of antibiotics.

Metronidazole only works after being reduced (a chemistry term for "adding electrons"), and in the case of Metronidazole this reduction only occurs inside Anaerobic bacteria. Because of this, it is not toxic to human cells, which are aerobic. Once reduced, Metronidazole interferes with bacterial DNA replication, making the cell unable to reproduce or make needed proteins, resulting in cell death. Metronidazole is considered a broad-spectrum antibiotic.

As you likely figured out, Metronidazole is best against anaerobic bacteria. Most of your gut bacteria and STD's are anaerobes, and so Metronidazole is a good choice for those infections. Metronidazole is also able to kill one of the most resistant bacteria in your gut– Clostridium difficile. Clostridium difficile (or C. diff, as it is often abbreviated) is thought to be present in the intestines of about 5% of the population. C. diff usually only causes a problem when all the other gut bacterial have been wiped out by another antibiotic, allowing C.diff to overgrow and cause problems. Metronidazole is one of only two antibiotics in common usage that will kill it.

Metronidazole is also interesting because it is one of the few antibacterials that also acts as an anti-protist and anti-helminthic. This means it can kill some parasites. In America, it is often used to treat Giardia lamblia (sometimes called Beaver Fever, due to its common presence in water that has been contaminated by beaver feces. Giardia is an anaerobic waterborne protozoon that causes abdominal pain, bloating, and fever with a watery diarrhea that can last for six weeks or longer). It is also used to treat Trichomonas vaginalis (a protozoa that is transmitted through sex and while rarely affecting men can cause a frothy greenish fishy smelling vaginal discharge in women), and Entamoeba histolytica (an anaerobic protozoa of the Amoeba family that causes amoebic dysentery and amoebic liver abscesses).

Metronidazole is generally considered the first line drug for the protozoal infections noted above, C. diff colitis, and infections suspected to be caused by anaerobes (dental abscesses, pelvic inflammatory disease, bacterial vaginosis, aspiration pneumonia, intra-abdominal

infections, lung abscesses, stomach ulcers caused by the bacteria Heliobacter pylori, and tetanus. It is a poor choice for treatment of streps and staphs, as they are both aerobic bacteria. Metronidazole penetrates the blood-brain barrier better than any other antibiotic and so is a good choice for meningitis caused by anaerobic bacteria. (Unfortunately, most meningitis cases are caused by aerobes.)

Side effects are common, and many complain of belly aches or a metallic taste in their mouth while taking this drug. You should also not drink alcohol while on this drug, as it interferes with your body's ability to metabolize alcohol and will give you an unpleasant though harmless reaction.

Clindamycin (Fish-Cin)

Clindamycin is a member of the lincosamide family of antibiotics, which were isolated from a member of the Streptomyces bacteria family.

Clindamycin works by binding to the ribosome (protein factory) of the bacteria making the bacteria unable to produce the proteins it needs to stay alive.

Clindamycin is a very broad-spectrum antibiotic able to kill a wide variety of both aerobic gram positive (streps and staphs) and anaerobic gram-negative bacteria, but gram-negative aerobes (like C. diff) are resistant. While resistance to Clinda is rare, it is increasing. Most strains of CA-MRSA are killed by Clinda, but resistance becomes more common the farther west you travel in the USA.

Clindamycin is the antibiotic most often associated with the development of C. diff colitis. Clinda does not kill C. diff but does kill all its competition, allowing it to overgrow, which leads to illness. C. diff colitis presents as abdominal pain, initial watery stools that eventually can become bloody, fevers that can reach 105 degrees, and stools that smell like horse manure. There will almost always be a history of the person having recently taken a broad-spectrum antibiotic. Imodium will significantly worsen the symptoms. Treatment is with Metronidazole or a fecal transplant. (Google that, if you dare.)

Clinda is considered a first line agent for skin and soft tissue infections (streps and staphs), pelvic infections, intra-abdominal infections (like peritonitis and diverticulitis), lung infections caused by Strep pneumo (lung abscesses, pneumonia, and empyema), bacterial vaginosis, and CA-MRSA.

A Word On Medication Allergies

Medication allergies are something we constantly worry about in the medical community. Lots of people claim to be allergic to this antibiotic or that antibiotic. The antibiotics people are most often allergic to are the penicillins and the sulfa family of antibiotics. Now I understand some

people have very significant and real allergies; if you have had hives or other signs of anaphylaxis, you are likely allergic to the antibiotic you had taken just prior to the reaction.

However, many people think they have an allergy because they had a more minor reaction while taking the antibiotic. I can't tell you how many patients I have seen who think they are allergic because they had a rash when they were three years old or the antibiotic upset their stomach one time. This was probably just a non-allergic side effect of the antibiotic or the illness and not a true allergy. An interesting study was recently performed at the Mayo Clinic in Florida. Three hundred eighty-four people with self-reported penicillin allergy had penicillin allergy testing performed. Guess what? Of those, 94% were negative.

In the modern medical world, allergies to an antibiotic are not that big a deal. There are lots of alternative antibiotics we can use if you are allergic. "Allergic to penicillin? Fine. We'll use a cephalosporin. Allergic to that, too?! Fine. We will use something else." However, in a post-apocalyptic scenario, the only antibiotic you may be able to get may be the one you have always thought you were allergic to. Will you take it? It probably depends on how ill you are and how bad the reaction you had to the antibiotic was.

Might I suggest that those of you who think you have an allergy to an antibiotic go see your doctor and have an allergy test BEFORE the SHTF. Then you will know what you are really allergic to and what you aren't.

Treatment For Specific Diseases

So…maybe you're feeling a little overwhelmed at this point. Yeah, I know how you feel, but we are not done yet. Again, it is my goal to give you good working knowledge of this topic, practical knowledge that hopefully in the bad times to come can save your life or the lives of your friends and family.

In a modern hospital when we really want to know which antibiotic is best, we get a sample of your blood, urine, spinal fluid, or puss from a wound and grow the bacteria in the lab with a bunch of antibiotics to see which antibiotic kills it best. Then, we start you on that antibiotic in confidence that it will kill the pathogen and get you back to good health.

In the post-apocalyptic scenario, you will have no such luxury. You will be having to play the odds. For instance, the bacteria most commonly isolated from acute ear infections are Strep pneumoniae (~55%), Haemophilus influenza (~25%), and Moraxella catarrhaliis (~15%). So you would pick Amoxicillin, since it generally kills all three. However, if it is one of the 2-3% of ear infections caused by Staph aureus, you would experience a treatment failure, as Amox does not kill staph. Playing the odds will be the only choice you have without the ability to culture bacteria and test their sensitivities.

Antibiotic Dosing Recommendations

Recommendations have been placed on the PDF so you can print it out and place it in your medical preps.

Antibiotic dosing recomendations - for TEOTWAWKI only

Condition	Preferred Antibiotic and dosing	Alternate
Abscess (puss pocket)		
Dental	I&D plus Clinda 300mg q8 x 7-10 days	Metro 500mg q6 x7-10days
Skin (not MRSA)	I&D plus Keflex 500-1000mg q8 x7 days	Cipro 500mg q8 x7days
Skin (MRSA)	I&D plus Bactrim 160/800 q12 x7 days	Clinda 300mg q8 x7days
Anthrax		
Post Exposure	Cipro 500mg q12 x60 days	Doxy 100mg q12 x60days
Cutaneous	Cipro 500mg q12 x10 days	Doxy 100mg q12 x10days
with Meningitis	(Cipro 500mg q8+Amp 1000mg q6+Clinda 900mg q6)x20d then Cipro 500mg q12 x40d	
Pulmonary	(Cipro 500mg q8 + Clinda 900mg q8) x60 days	
Bacteremia (Sepsis)	(Metronidazole 750mg q8 + Cipro 500mg q12) x10 days	
Bite (Human or animal)	(Doxy 100mg q12 or Bactrim 160/800 q12) + (Metro 500mg q8 or Clinda 450mg q8)	
Cellulitis (infection under the skin)		
Body (non-MRSA)	Keflex 500mg q6 x7-10 days	Cipro 500mg q8 x7 days
Body (MRSA)	Bactrim 160/800 q12 x7-10 days	Clinda 300mg q8 x7-10 days
Periorbital	Clinda 300mg q8 x10 days	Cipro 500mg q8 x10 days
Orbital	Clinda 450mg q8 x10 days	Cipro 500mg q8 x10 days
Ear infection	Amox 875mg q12 x10 days	Amp 500mg q6 x10 days
Epididymitis (testicle infection)	Doxy 100mg q12 x10 days	Bactrim 160/800 q12 x10 days
Erysipelas	Keflex 500mg q6 x7-10 days	Amox 875mg q12 x7-10 days
Gastric ulcer (H. pylori)	(Amox 1gm q12 + Doxy 100mg q12) x14 days	Metro 500mg q8+Cipro 500mg q8
Gastroenteritis (stomach infection)		
Bloody Diarrhea	Water+Electrolytes+Cipro 500mg q12 x3 days	Bactrim 160/800 q12 x3 days
C. diff	Metro 500mg q8 x14 days	none
Giardia	Metro 250 q8 x5 days	none
Travelers Diarrhea	Water+Electrolytes+Cipro 500mg q12 x3 days	Bactrim 160/800 q12 x10 days
Watery Diarrhea (Cholera)	Water+Electrolytes+Doxy 300mg once	Cipro 1gm once
Amoebic dysentery	Metro 500mg q8 x10days	none
Impetigo	Neosporin, Tea Tree oil	Keflex 500mg q6 x7 days
Inter-abdominal infections		
Peritonitis	Cipro 500mg q12 x7 days	Metro 500mg q8 x7days
Lymphadenitis		
Cat-scratch	Bactrim 160/800 q12 x7-10 days	Cipro 500mg q12 x7-10 days
non Cat-scratch mild	Keflex 500mg q6 x7 days	Amox 875mg q12 x7 days
non Cat-scratch severe	Clinda 300mg q8 x10 days	Bactrim 160/800 q12 x10 days
Lyme disease	Doxy 100mg q12 x10 days	Amox 500mg q8 x14-21 days
Mastitis (breast infection)		
lactating	Keflex 500mg q6 x10 days	Clinda 300mg q6 x10 days
non-lactating	Clinda 300mg q8 x10 days	Cipro 500mg q12 x10 days
Meningitis (spine infection)	(Cipro 500mg q8+Amp 1000mg q6)x20d	
Orchitis (testicle infection)	Doxy 100mg q12 x10days	
Osteomyelitis (bone infection)	(Cipro 750mg q12 + Bactrim 160/800 q12) x42 days	
Parotitis (salivary gland infection)	Keflex 500mg q6+ (Metro 500mg q8 or Clinda 600mg q8) x10-14 days	
Plague, bubonic	Doxy 200mg (loading) then 100mg q12 x10 days	Cipro 500mg q12 x10 days

Condition	Preferred Antibiotic and dosing	Alternate
Pneumonia (lung infection)		
Pertussis	Bactrim 160/800 q12 x14 days	Cipro 500mg q12 x14 days
Community Acquired	Amoxicillin 875mg q12 x10 days	Doxy 100mg q12 x10 days
Walking	Doxy 100mg q12 x10 days	Cipro 500mg q12 x10 days
Prostatitis (prostate infection)	Bactrim 160/800 q12 x42 days	Cipro 500mg q12 x42 days
Septic Joint	(Cipro 500mg q12+Clinda 600mg q8) x28 days	Needle drainage may be needed
Sinus infections		
Virus (<12 days)	supportive care (fluids, rest, good food, vitamins)	
Acute (>12 days)	Amoxicillin 875mg q12 x14 days	Doxy 100mg q12 x14
Chronic (>42 days)	Clinda 300mg q8 x24	Metro + Bactrim
Strep throat	Keflex 500mg q12 x10	Amoxicllin 500mg q12 x10
STD's		
Chlamydia	Doxy 100mg q12 x7 days	Cipro 500mg q12 x7 days
Gonorrhea	Doxy 100mg q12 x7 days	Cipro 500mg q12 x7 days
Pelvic Inflam. Disease	(Doxy 100mg q12 + Clinda 600mg q12) x14 days	Can sub Metro for Clinda
Syphilis	Doxy 100mg q12 x14 days	none
Trichomoniasis	Metro 2000mg once	none
Tetanus	wound debridement + metro 500mg q6 x10 days	Doxy 100mg q12 x10 days
Tick borne illnesses		
Typhus	Doxy 100mg q12 x7 days	none
Rky Mtn Spot Fever	Doxy 100mg q12 x7 days	none
Tularemia	Doxy 100mg q12 x14 days	Cipro 500mg q12 x14 days
UTI		
Routine	Bactrim 160/800 q12 x3 days	Cipro 250mg q12 x3 days
Pyelonephritis	Cipro 500mg q12 x14 days	Bactrim 160/800 q12 x14 days

Some abbreviations you will need to know to understand this table

- q6: every six hours
- q8: every 8 hours
- q12: every 12 hours
- q24: every 24 hours (once daily)
- I&D: incision and drainage of puss (usually used in reference to an abscess). This is a very important step and should not be skipped. Antibiotics have trouble penetrating into the middle of a puss pocket and so if not drained the duration of therapy will need to be doubled or tripled.

Dosing usually follows common sense rules. These doses are for adult patients. If a range is given it should be interpreted as little adult to big adult and/or mild infection vs. more serious infection. Pediatric dosing is also based on size/weight and will usually be between one-forth the adult dose (babies) to the full adult dose (large teenager).

- *Militant Medic for SurvivalBlog.com*

Amazon has some of these antibiotics available, though you will have to get some from a veterinary supply or pet store. The PDF recommends which of these nine (actually eight, because I'm not going to consider penicillin for anything) pet antibiotics should be used for each of the listed infections.

- Clinda
- Metro

- Keflex
- Amox
- Doxy
- Cipro
- Bactrim
- Amp

Very specific weight-based dosing is available for kids, and you can look it up if you desire, but usually a good ballpark dose will get the job done. With most of these medications erring on the high side would be better than going too low.

Again, I must stress that this advice is only good for a TEOTWAWKI scenario. The recommendations on this list assume you only have access to the nine (eight) antibiotics listed above, and in many cases I had to recommend an inferior (second or third line) choice because I only had the nine (eight) above to choose from. This is especially true of the more severe infections (peritonitis, osteomyelitis, septic joints, meningitis) that are usually treated in the hospital with IV antibiotics and surgery. In the modern functional world, there may be much better choices for the following infections. So, if you get an infection, go see your doctor, and he will use the most up-to-date research and most modern medications to get you back on your feet.

I'm doing my best to provide good advice for AFTER it all falls apart. I will not be held responsible for any harm caused if you should use this information before that time.

Let's Treat Some Patients

So…

I have given you a basic understanding of the different pathogens that cause infections in people.

I have given you a basic understanding of the nine different pet antibiotics most available to us as preppers.

I have given you the first line and alternate agents (of the nine available to us; remember the hospital might have better ones) to treat a variety of infections you are likely to encounter.

And I gave you a big nasty list of patients needing your help. (Too bad you didn't have better OPSEC.)

So let's treat some patients and get them out of our front yard.

1) Your wife has a sore throat without a runny nose or cough. It hurts to swallow. Little red spots are scattered across the back of her mouth and her tonsils are swollen and beefy red without white spots.

Diagnostic features: a) sore throat WITHOUT runny nose or coughing, and b) little red spots (palatial petechia, which are classic for strep, that are beefy red WITHOUT white patches.

Diagnosis: Strep throat

Treatment: Keflex, Amox, or ampicillin.

2) Your son cut his hand a few days ago while sharpening an ax and now the cut is red, hot, and oozing puss.

Diagnostic features: Trauma with signs of infection (redness, warmth, pain, swelling, puss).

Diagnosis: Cellulitis. Probably not resistant strain.

Treatment: Keflex or Cipro.

3) Your other son also cut his hand while salvaging some stuff from a nursing home. His wound is also red, hot, and oozing puss.

Diagnostic features: Trauma with signs of infection (redness, warmth, pain, swelling with puss).

Diagnosis: Cellulitis. Increased risk for MRSA due to injury happening at nursing home or hospital.

Treatment: Bactrim or Clinda

4) Your grandson (who never got his vaccinations because your son didn't believe the "lies" of big pharma) is having coughing fits that take his breath away and end in a "Whoop" of inhaled air.

Diagnostic features: Paroxismal cough with "Whoop"

Diagnosis: Whooping cough (pertussis)

Treatment: Bactrim or Cipro. Even with treatment, children will cough for up to three months.

Let's Treat Some Patients (continued)

5) Your other grandson (again with no vaccinations) has broken out with a fever, runny nose, and rash, which consists of small fluid-filled blisters on bright red spots on his skin. They itch and when one area gets better another bunch crop up elsewhere.

Diagnostic features: fluid-filled blisters on red skin occurring in crops, non-vaccinated.

Diagnosis: Chickenpox

Treatment: Viral illness- no cure. Supportive care with spontaneous resolution without complication in 99% of kids (80% of adults).

6) Your third grandson (again with no vaccinations) has headache, vomiting, muscle aches, a fever of 104.2, and weakness of his left leg muscles. Ten days ago you chastised him for drinking untreated water from a creek. He didn't know, but it was downstream from a big FEMA refugee camp.

Diagnostic features: CNS signs (headache, vomiting, muscle weakness), high fever, water contaminated with human waste, non-vaccinated.

Diagnosis: Polio

Treatment: Viral illness- no cure. Illness will either progress to death (2-5%), or he will recover with a permanent weakness of the muscles of the affected nerve pathway.

7) Your neighbor's wife has a fever, abdominal pain, and vaginal drainage. You know she was raped on a trip to the farmers market one week ago.

Diagnostic features: Sexual trauma, unknown pathogen, pain, fever, drainage.

Diagnosis: Pelvic Inflammatory Disease

Treatment: Doxycycline plus (Clindamycin or Metronidazole)

8) A farmhand seemed okay yesterday but woke with a fever to 102.9, chills, coughing, body aches, runny nose, and a headache. His nasal drainage is yellow-green.

Diagnostic features: Rapid onset, fever, coughing, body aches.

Diagnosis: Influenza

Treatment: Viral illness- no cure. Supportive care leads to complete resolution without complications in 80%. If symptoms persist past seven days, consider treating for pneumonia.

9) Your teenaged daughter has not been drinking enough since you ran out of "flavor enhancers" for your water. Now, she has a fever of 101.5, painful urination, urinary frequency, and urinary urgency. Her urine smells "strong".

Diagnostic features: Inadequate fluid intake. Pain with urination, urgency, frequency. Fever.

Diagnosis: UTI

Treatment: Bactrim or Cipro

10) Your prepper neighbor (who has a special filter to remove the fluoride from his city water) has been struggling with a toothache for a few days, but now he can barely open his mouth. He has a fever of 102.3, jaw pain, and swelling on the right side of his face. He says he can taste a foul drainage from the base of the tooth. He took some penicillin he had stocked, and it seemed to help a little but then his symptoms got worse.

Diagnostic features: toothache that progressed. Facial swelling. Fever, puss, failure to respond to penicillin.

Diagnosis: Dental Abscess

Treatment: I&D plus Clindamycin or Metronidazole

11) Your neighbor ran out of food a while ago and has been shooting and eating prairie dogs out of desperation. He was okay yesterday but woke in the middle of the night with fever and now has fever to 103.7, headache, chills, muscle aches, and diarrhea. He also says his “glands” are swollen in his neck, armpit, and groin. (plague)

Diagnostic features: prairie dog exposure, rapid onset, swollen armpit and groin lymph nodes.

Diagnosis: Bubonic Plague (Yersinia pestis)

Treatment: Doxycycline or Cipro. Even with antibiotics, there is an 8-10% mortality rate.

12) Another neighbor was out hunting when he drank untreated water from a creek. Upstream he found a beaver pond. He presents with four days of abdominal pain, copious (8-10 stools daily), watery (non bloody) diarrhea, and a fever to 102.2.

Diagnostic features: Water contaminated with mammal feces, abdominal pain, frequent watery diarrhea

Diagnosis: Giardia

Treatment: Metronidazole (or supportive care; without treatment will resolve spontaneously in up to six weeks)

13) A boy from down the road was caught looting a house and was hit in the abdomen with three rounds of 00 buckshot as he ran away. This was two days ago. He presents with a swollen painful abdomen that is rock hard and fever to 105.6. He is incoherent and having hallucinations. The buckshot is still in his body. His father begs you to save him, and he says he will give you his cherry 1965 Mustang fastback if you do. (If he hadn’t spent so much time and money on that car he might have been able to get some preps of his own and wouldn’t have had to resort to looting houses for food.)

Diagnostic features: penetrating abdominal trauma, rigid abdomen, fever

Diagnosis: Peritonitis

Treatment: Cipro or Metronidazole (Regardless of treatment, this child is likely to die. The holes in his intestines will constantly be spilling bacteria into his abdominal cavity; without surgical closure of the intestinal perforations, it is only a matter of time before he dies. Might want to save your antibiotics to use on someone who has a greater chance of recovery. Look up “Triage-Black tag”.)

14) Your neighbor’s son presents with fever, fatigue, headaches, vomiting, and diarrhea, and has been unable to sleep. Dad hoped it was just a virus and would pass, but this morning he had a seizure and the father brings him to you. Two months ago the child found a bat in their grass in the middle of the day. He picked it up and got bit, but the wound seemed to heal without complication.

Diagnostic features: bite from mammal acting oddly, CNS signs (headache, vomiting, seizure), long incubation time

Diagnosis: Rabies

Treatment: Viral illness- no cure. Supportive care until child dies. 99.9% fatal (only a handful of documented cases of recovery in the history of mankind, and these all required days in the ICU and drugs you don’t have).

15) Your aged mother has had a sore throat, low grade fever of 100.6, and stuffy nose for four days. There are white patches on her tonsils. It hurts a little to eat or drink.

Diagnostic features: runny nose and cough. Exudate (white patches). Brief duration.

Diagnosis: Viral URI (likely Rhinovirus)

Treatment: Viral illness- no cure. Supportive care. If symptoms persist out beyond 12-14 days, consider examining/treating for sinus infection or pneumonia.

16) A farmer from down the road (whom you don’t like very well) tells you he has been trading food for sexual favors from the desperate unprepared women of the nearby town. He says there is an ulcer on the head of his penis. Otherwise, he feels fine. It does not hurt, but he is worried he might have “picked something up from one of those whores!”

Diagnostic features: Painless chancre in sexual active adult.

Diagnosis: Syphilis

Treatment: Doxycycline. In the modern world, we would try to track sexual partners and treat them too.

17) A coworker has shown up for help. You had talked to him about prepping, and he was on the path when the balloon went up. He presents with bloating, watery diarrhea that has streaks of blood in it, abdominal pain, and a fever to 104.7. He says the diarrhea smells like horse manure. He also says he recently had a suspected strep throat and took Clindamycin for it (its the only antibiotic he had. While the throat got better, the diarrhea (which he suspected to be from the antibiotic) has been present for nine days now and is getting worse.

Diagnostic features: bloody diarrhea, abdominal pain, high fever, recent broad spectrum antibiotic use, long duration

Diagnosis: C. diff colitis

Treatment: Metronidazole

18) A neighbor's child has been struggling with an illness for a few days but over the last 24 hours has worsened significantly. She awoke this morning with a very stiff neck, high fever, severe headache, and severe nausea. She also has broken out with a blotchy purplish rash on her lower extremities that does not go pale (blanch) when you push on it. Father is here begging for help.

Diagnostic features: stiff neck, high fever, severe headache, purpuric rash

Diagnosis: Meningitis (purpuric rash is classic for Neisseria meningitis)

Treatment: Cipro and Ampicillin (even with treatment with IV antibiotics there is about a 6-8% mortality rate, and even with recovery between 30-50% will have permanent neurological complications with deafness being the most common). In approximate order of greatest CNS penetration to least CNS penetration for your antibiotics: Metronidazole–>Cipro–>Ampicillin–>TMP-SMX–>Doxycycline–>Clindamycin –>Penicillin–>Amoxicillin–>Keflex.

19) A neighbor has been ill for about five days. Started with two days of non-bloody vomiting and then evolved into watery non-bloody diarrhea. Had a fever of 101.3 at the beginning of the illness but does not have one now.

Diagnostic features: non-bloody vomiting evolving into non-bloody diarrhea, short duration, no fever

Diagnosis: viral gastroenteritis (common causes include Norovirus, Enterovirus, Rotavirus, Astrovirus, and Adenovirus)

Treatment: Viral illness- no cure. Supportive care including fluids to avoid dehydration. Imodium okay as long as the diarrhea is not bloody.

20) A neighbor ran out of food a few weeks ago and has been out foraging in the forest. He has pulled a lot of ticks off his body. He presents with fever to 102.5, muscle aches, a headache, and a rash on his thigh that looks like a bullseye with concentric rings of redness.

Diagnostic features: Bullseye or target lesion, tick exposure, fever, body aches.

Diagnosis: Lyme disease

Treatment: Doxycycline or Amoxicillin

So now you are the hero (except to that one family). You have provided sound medical advice and treated 19 of your 20 patients. Your understanding of the causes of illness and how to treat them using nothing more than pet antibiotics gives you a real skill that can be used in the world you now live in after the TEOTWAWKI event. Whether you use this skill to help just your family of an entire neighborhood is up to you. Also, up to you will be how you "bill" for your services. Your skill and your antibiotics are an incredibly valuable bartering commodity.

Good luck.

Part 1 - https://survivalblog.com/2015/11/10/infectious-disease-in-the-teotwawki-world-part-1-by-militant-medic/

Part 2 - https://survivalblog.com/2015/11/11/infectious-disease-in-the-teotwawki-world-part-2-by-militant-medic/

Part 3 - https://survivalblog.com/2015/11/12/infectious-disease-in-the-teotwawki-world-part-3-by-militant-medic/

Part 4 - https://survivalblog.com/2015/11/13/infectious-disease-in-the-teotwawki-world-part-4-by-militant-medic/

Part 5 - https://survivalblog.com/2015/11/14/infectious-disease-in-the-teotwawki-world-part-5-by-militant-medic/

Part 6 - https://survivalblog.com/2015/11/15/infectious-disease-in-the-teotwawki-world-part-6-by-militant-medic/